RESPONSE AND REQUEST FOR RECONSIDERATION

Support.

The amendments have the effect of requiring component (c), the borating agent to be present. Support is found throughout the specification and original claims, indicating that either (c) or (d) or both are present. Applicants have elected to select the options that (c) is present, or alternatively both (c) and (d) are present. Various minor conforming amendments are introduced into the dependent claims. In claims 17 and 18, a non-zero lower limit for the relative amount of component (c) is introduced, consistent with the fact that (c) is now a required component. Support is found in the claim as originally written, which specifies in each case a total minimum amount of (c) plus (d). If (d) is elected to be zero, then the amount of (c) will inherently be at least the minimum value cited.

In claim 27, language is added to indicate that a mixture of the indicated components is heated together. Support is found paragraph 0032. Heating together a mixture of the components is to be distinguished from adding and reacting each of the components sequentially.

Claim 9 has been cancelled and rewritten as new independent claim 28. New claim 29 further indicates that a mixture of the components of claim 28 has been heated together.

No elements of the claims are amended except for requiring the presence of the borating agent, and in claim 17-18, in a certain amount; specifying, in claim 27, that it is a mixture of components that is heated together; and rewriting claim 9 in independent form.

Response.

Entry and consideration of these amendments is requested at this time because it is believed that they will put the claims in condition for allowance or will simplify issues for appeal.

Looking first at claim 27, it is submitted that the present amendment, specifying that a mixture of the indicated components is heated together will answer the Examiner's objection with regard to the Davis reference, '043. The Examiner had objected that the initially proposed language, reciting a step of "heating together," would not exclude heating together of a preformed dispersant containing boron or phosphorus, with DMTD. However, now that a mixture of these components is specified, it is believed that it is plain that the reaction mixture will contain all the required component, in contrast to what is arguably taught by Davis. Davis discloses merely the heating of a mixture of DMTD with a dispersant (col. 9 line 19), wherein the dispersant

might have been (previously, separately) post-treated with boron compounds or phosphorus compounds (col. 3 lines 36-41).

The Examiner had also objected to Applicants' argument that there is no motivation in Davis to choose a dispersant treated with boron or phosphorus over other disclosed dispersants. To arrive at the composition of the present invention would require a selection, from among the scores if not hundreds of types of dispersants available, one of the dispersants which is not from Davis's "preferred" group. Moreover, any *prima facie* case of obviousness is overcome by the evidence presented in the Declaration from Dr. Tipton, when considered in light of the discussion below.

The Examiner had also objected to Applicants' statement that boric acid is only slightly soluble in oil and would not normally be used as such in a lubricant formulation. In this regard, the Examiner cited the apparent use of boric acid in the formulation of Le Suer, 3,087,936. A careful reading of Le Suer, however, will reveal that boric acid is not used, *as such*, in a lubricant formulation. Le Suer prepares oil-soluble nitrogen- and boron-containing compositions. It is those compositions that are used in lubricant formulations, and those compositions are themselves prepared, in turn, by reaction of boric acid with an acylated nitrogen compound (see col. 17 lines 16 – 20). Boric acid itself is not used directly in a lubricant formulation of Le Suer.

If boron is to be usefully imparted to a lubricating composition, it must be provided in some soluble form. It may, indeed, be solubilized by reaction with a nitrogen-containing dispersant. Or, as is frequently done, it may be provided as a soluble borate ester such as, for example, a tri-C_8 alkyl borate. This is, in particular, why Dr. Tipton, in his Declaration, compared a formulation containing a mixture of DMTD-treated dispersant plus tri-C8 alkyl borate, against the DMTD-treated dispersant which had also been borated. Both of these formulations could properly be used as lubricant formulations, but a formulation which contained unreacted boric acid, as such, would be unsuitable as a lubricant formulation, at least for any reasonable applications such as engine or transmission lubrication.

It is when this proper comparison is made that one of the advantages of the present invention becomes apparent. That is, the total amount of additive can be significantly reduced when both the boron component and the DMTD component are combined onto the dispersant moiety. This comparison is properly made against a reasonable and feasible lubricant formulation, not a hypothetical and non-functional formulation containing insoluble, unreacted boric acid.

As to the breadth of the present claims, it is submitted that it is now commensurate with the data that has been presented. In particular, the claims now require that the boron component is reacted with the dispersant, and it is this embodiment for which a

significant advantage was shown, in terms of weight of additives. The corresponding advantage in the case where only the phosphorus component was reacted (no longer a part of the present claims) was significantly less pronounced.

The Examiner's attention is also directed to new claim 27, which represents the subject matter of original claim 9 rewritten in independent form. The reaction product of dispersant with DMTD and, specifically, boric acid quite nicely corresponds in scope with the experimental evidence presented.

Conclusion.

For the foregoing reasons it is submitted that the present claims are unobvious and in condition for allowance. The foregoing remarks are believed to be a full and complete response to the outstanding office action. Therefore an early and favorable reconsideration is respectfully requested. If the Examiner believes that only minor issues remain to be resolved, a telephone call to the Undersigned is suggested.

Fees

The total number of claims is increased from 27 to 28, for which the fee is believed to be $50.00. The number of independent claims is 3, for which no additional fee is due. The fee of $50.00, as well as any other required fees or any deficiency or overpayment in fees should be charged or credited to deposit account 12-2275 (The Lubrizol Corporation).

Respectfully submitted,

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